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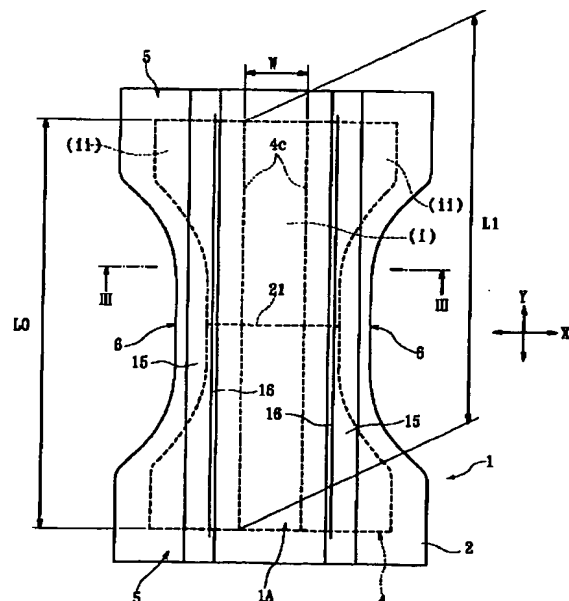
(54) 【発明の名称】 吸収性物品

(57) 【要約】

【課題】 パンツなどの内側に装着される吸収性物品は、装着時または装着中に緩れたりたくれやすい。また、装着時にパンツなどと位置合わせするのが難しい。

【解決手段】 吸収性物品1は、トップシート2、吸収コア4、バックシート3との積層体1Aからなり、この積層体1Aの横方向の中央領域では幅Wの範囲で剛軟度の高い領域(i)が形成され、その両側領域は剛軟度の低い領域(ii)である。剛軟度の高い領域(i)を有しているため、装着時または装着中に平坦度を維持でき、緩れやたくれが生じにくい。また中央領域の折曲部21の部分から二つ折りできる。

図1



## 【特許請求の範囲】

【請求項1】 液透過性のトップシートと、バックシートと、前記トップシートとバックシートの間に設けられた吸収コアとを有する積層体で構成された吸収性物品において、装着者の下腹部から尻部に向かって延びる方向を縦方向、これと直交する方向を横方向としたときに、前記積層体の横方向の中央領域の剛軟度が、横方向の両側領域で且つ吸収コアが存在している領域の剛軟度よりも高いことを特徴とする吸収性物品。

【請求項2】 前記縦方向の中央領域において、剛軟度の高い領域の横方向の幅寸法が10mm以上で60mm以下である請求項1記載の吸収性物品。

【請求項3】 前記中央領域に剛軟度強化手段を有し、液を吸収しない未使用時において、この剛軟度強化手段が設けられた領域における積層体のJIS・P8125テーパースティフネステストで測定した縦方向の剛軟度が、前記剛軟度強化手段を有していない部分で且つ吸収コアが存在している領域における積層体の前記縦方向の剛軟度の2倍以上である請求項1または2記載の吸収性物品。

【請求項4】 前記中央領域に剛軟度強化手段を有し、液を吸収した状態における、前記剛軟度強化手段が設けられている領域の前記積層体の前記縦方向の剛軟度が、前記剛軟度強化手段を有していない部分で且つ吸収コアが存在している領域における積層体の前記縦方向の剛軟度よりも高い請求項1～3のいずれかに記載の吸収性物品。

【請求項5】 前記剛軟度の低い領域で且つ吸収コアが存在している領域における積層体のJIS・P8125テーパースティフネステストで測定した縦方向の剛軟度が、液を吸収しない未使用時において19mN・cm以上で400mN・cm以下である請求項1～4のいずれかに記載の吸収性物品。

【請求項6】 前記積層体には、少なくとも2層の吸収コアが設けられており、下層の前記吸収コアの中央領域が前記剛軟度強化手段により剛軟度が強化されている請求項3～5のいずれかに記載の吸収性物品。

【請求項7】 上層の吸収コアは、前記下層の吸収コアの前記中央領域に重なる部分で、剛軟度が前記下層の前記剛軟度強化手段を有している前記中央領域の剛軟度よりも低くされている請求項6記載の吸収性物品。

【請求項8】 前記上層の吸収コアには、前記下層の吸収コアの前記中央領域と前記両側領域との境界部と重なる部分において、縦方向に延びる溝が形成されている請求項6または7記載の吸収性物品。

【請求項9】 前記下層の吸収コアには、前記上層の吸収コアの溝と同じ位置に溝が形成されている請求項8記載の吸収性物品。

【請求項10】 前記中央領域における吸収コアそのものの剛軟度を、前記両側領域での吸収コアの剛軟度より

も高くし、前記の剛軟度を高くした吸収コアそのものが前記剛軟度強化手段とされている請求項1～9のいずれかに記載の吸収性物品。

【請求項11】 前記中央領域では、吸収コアが部分的にまたは全面的に加圧されることにより剛軟度が高くされている請求項10記載の吸収性物品。

【請求項12】 前記中央領域では、縦方向に延びる複数のエンボス線が加圧形成されている請求項11記載の吸収性物品。

10 【請求項13】 前記中央領域において吸収コア内または吸収コアの外部に補強部材が設けられ、この補強部材が前記剛軟度強化手段とされている請求項1～9のいずれかに記載の吸収性物品。

【請求項14】 前記剛軟度の高い領域の縦方向の長さが、前記吸収コアの縦方向の長さの1/2以上である請求項1～13のいずれかに記載の吸収性物品。

20 【請求項15】 前記剛軟度の高い領域と剛軟度の低い領域との境界部において、前記吸収コアに溝が形成されている請求項1～7、10～14のいずれかに記載の吸収性物品。

【請求項16】 少なくとも前記剛軟度の高い領域に、横方向に延びる軟質化された折曲部が設けられ、この折曲部を介して縦方向に重なる状態に折り曲げ可能とされている請求項1～15のいずれかに記載の吸収性物品。

## 【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、失禁患者や老人用などに使用される尿取りパッド、失禁パッドまたは生理用ナプキンなどの吸収性物品に係り、特にパンツ、おむつなどの外部装着体の内側に重ねて使用する際に、縫れやたくれが生じることなく安定して装着できる吸収性物品に関する。

【0002】

【従来の技術】尿取りパッド、失禁パッドまたは生理用ナプキンなどの吸収性物品は、パンツやおむつなどの外部装着体の内側に重ねて使用するのが一般的である。

【0003】また、この種の吸収性物品は、液透過性のトップシートと液不透過性のバックシートとの間に吸収コアが介装されている構造であるが、さらに横方向の両側部に、ゴムなどの弾性体を配したレッグギャザーや、装着者の肌方向に立ち上がる立体ギャザーが形成されているものがある。

【0004】

【発明が解決しようとする課題】従来の吸収性物品は、装着者の肌に対する装着感を考慮して、製品そのもののできる限る柔軟にしている。しかし、パンツやおむつなどの外部装着体の内側に重ねて使用する際に重要である装着しやすさや、縫れやたくれを防止することについてはほとんど考慮されていなかった。

50 【0005】特に、前記レッグギャザーや立体ギャザー

が形成されたものでは、ギャザーを形成するための弾性部材が、横方向の両側部において縦方向に延びるように取り付けられているため、外部装着体に重ねるときに吸収性物品が変形しやすい。その結果、

(1) 吸収性物品をパンツやおむつなどの外部装着体の内側にフラットな状態で装着することが難しい。

【0006】(2) 外部装着体の内側に吸収性物品を当てるときに縫れやたくれが生じやすく、さらに装着状態で体の動きにより前記縫れやたくれが発生し、または縫れやたくれが増大し、その結果体液の横漏れが生じやすくなる。

【0007】(3) 吸収性物品を、外部装着体の最下部に正確に当てるのが難しい。特にパンツの内側に装着するときには、吸収性物品をパンツのウエスト開口部から内部に挿入し、そのままパンツ内に脚部を挿入して装着することになるため、パンツが身体に完全に装着されるまでの間に、パンツ内での吸収性物品の位置ずれ、縫れまたはたくれが発生しやすい。

【0008】本発明は上記従来の課題を解決するものであり、外部装着体の内側に重ねたときに縫れやたくれが発生しにくく、身体に確実にフィットできるようにした吸収性物品を提供することを目的としている。

【0009】また本発明は、パンツなどの外部装着体の最下部の中央部に確実に位置決めして装着できるようにした吸収性物品を提供することを目的としている。

【0010】

【課題を解決するための手段】本発明は、液透過性のトップシートと、バックシートと、前記トップシートとバックシートの上に設けられた吸収コアとを有する積層体で構成された吸収性物品において、装着者の下腹部から尻部に向かって延びる方向を縦方向、これと直交する方向を横方向としたときに、前記積層体の横方向の中央領域の剛軟度が、横方向の両側領域で且つ吸収コアが存在している領域の剛軟度よりも高いことを特徴とするものである。

【0011】この吸収性物品は、尿取りパッド、失禁パッドまたは生理用ナプキンなどのように、パンツやおむつなどの外部装着体の内側に重ねて使用するものにおいて有効である。吸収性物品を構成する積層体に、縦方向に延びる剛軟度の高い領域を設けておくことにより、外部装着体の内側に装着された状態の吸収性物品に、縫れやたくれを生じにくくなり、フラットな状態で装着されやすくなる。

【0012】そのためには、前記縦方向の中央領域において、剛軟度の高い領域の横方向の幅寸法が10mm以上で60mm以下であることが好ましい。

【0013】また、前記中央領域に剛軟度強化手段を有し、液を吸収しない未使用時において、この剛軟度強化手段が設けられた領域における積層体のJIS・P8125テーパーバースティフネステストで測定した縦方向の剛

軟度が、前記剛軟度強化手段を有していない部分で且つ吸収コアが存在している領域における積層体の前記縦方向の剛軟度の2倍以上であることが好ましい。

【0014】また、前記中央領域に剛軟度強化手段を有し、液を吸収した状態における、前記剛軟度強化手段が設けられている領域の前記積層体の前記縦方向の剛軟度が、前記剛軟度強化手段を有していない部分で且つ吸収コアが存在している領域における積層体の前記縦方向の剛軟度よりも高いことが好ましい。

【0015】なお、前記剛軟度の低い領域で且つ吸収コアが存在している領域における積層体のJIS・P8125テーパーバースティフネステストで測定した縦方向の剛軟度が、液を吸収しない未使用時において19mN・cm以上で400mN・cm以下であることが好ましい。

【0016】この範囲とすることにより、剛軟度の低い領域の吸収コアの肌への接触が優くなる。

【0017】前記積層体には、少なくとも2層の吸収コアが設けられており、下層の前記吸収コアの中央領域が前記剛軟度強化手段により剛軟度が強化されていることが好ましい。この場合、上層の吸収コアは、前記下層の吸収コアの前記中央領域に重なる部分で、剛軟度が前記下層の前記剛軟度強化手段を有している前記中央領域の剛軟度よりも低くされていることが好ましい。

【0018】また、前記上層の吸収コアには、前記下層の吸収コアの前記中央領域と前記両側領域との境界部と重なる部分において、縦方向に延びる溝が形成されることがができる。この場合、前記下層の吸収コアには、前記上層の吸収コアの溝と同じ位置に溝が形成されることが好ましい。

【0019】なお、前記中央領域における吸収コアそのものの剛軟度を、前記両側領域での吸収コアの剛軟度よりも高くし、前記の剛軟度を高めた吸収コアそのものが剛軟度強化手段とされていてもよい。例えば、前記中央領域では、吸収コアが部分的にまたは全面的に加圧されることにより剛軟度が高くなっていることができる。さらには、前記中央領域では、縦方向に延びる複数のエンボス線が加圧形成される。

【0020】あるいは前記中央領域において吸収コア内または吸収コアの外部に補強部材が設けられ、この補強部材が剛軟度強化手段とされてもよい。

【0021】さらに、前記剛軟度の高い領域の縦方向の長さが、前記吸収コアの縦方向の長さの1/2以上であることが好ましい。

【0022】また、前記剛軟度の高い領域と剛軟度の低い領域との境界部において、前記吸収コアに溝が形成されていることが好ましい。

【0023】また、少なくとも前記剛軟度の高い領域に、横方向に延びる軟質化された折曲部を設け、この折曲部を介して縦方向に重なる状態に折り曲げ可能とすることもできる。なおこの折曲部は、剛軟度の高い領域の

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みではなく、剛軟度の低い領域まで延び、吸収コアを横方向に横断していてもよい。

【0024】

【発明の実施の形態】図1は本発明の吸収性物品の一例として大人用の尿取りパッド（または失禁パッド）を示す斜視図、図2はその展開状態を示す平面図、図3は図2のⅠⅠⅠ-ⅠⅠⅠ線の断面図、図4（A）（B）

（C）は剛軟度強化手段の構造を実施の形態別に示す断面図、図5は外部装着体であるパンツの内側に本発明の吸収性物品が装着された状態を示す斜視図である。

【0025】この吸収性物品1は、図3の断面図に示すように、装着者の肌に向けられる液透過性のトップシート2と、パンツやおむつなどの外部装着体に向けられるバックシート3と、トップシート2とバックシート3との間に設けられる吸収コア4とを有する積層体1Aにより構成されている。前記バックシート3は液不透過性シートである。ただし外部装着体としてパンツ型やオープン型のおむつが使用され、このおむつの内側に設置されるものである場合に、前記バックシート3の一部の領域または全領域が液透過性であって、吸収性物品1の吸収

コア4で吸収しきれない尿がおむつの吸収体へ伝わるようにしてもよい。

【0026】トップシート2は、疎水性繊維に親水処理したものまたは親水性繊維などで形成されたものであり、例えばポイントボンド、エアスルー、スパンボンド、スパンレースなどの不織布である。またバックシート3はオレフィン系の樹脂シート、不織布、樹脂シートと不織布とを重ねたものなどにより形成されている。吸収コア4は、粉碎バルブあるいは粉碎バルブと高吸水性ポリマーなどの混合物により形成され、粉碎バルブ、あるいは粉碎バルブと高吸水性ポリマーとの混合物がティッシュなどの吸収性シートで包まれている。

【0027】吸収コア4が、トップシート2とバックシート3とで挟まれた状態で、図1や図2に示すように、トップシート2とバックシート3は、吸収性物品1の縦方向両端の縁部5、5、横方向両側の縁部6、6において互いに重ねられ、ホットメルト型接着剤などにより両シート2と3とが接合されている。

【0028】装着者の下腹部から尻部に向けられる方向が縦方向（Y方向）、これに直交する方向（X方向）を横方向としたとき、図1と図2に示す吸収性物品1は、縦方向が長手方向となる全体がいわゆる砂時計形状である。すなわちトップシート2、バックシート3、吸収コア4が全て砂時計形状である。ただし吸収コア4のみが長方形であってもよいし、吸収性物品1全体が長方形であってもよい。

【0029】また吸収性物品1の内面には、横方向の両側部において縦方向に延びる疎水性シート15、15の基端部が接合され、その自由端部には縦方向に延びる弾性部材（例えばゴムバンド）16、16が伸長させた状

態で取り付けられている。その結果、図1に示すように、吸収性物品1の両側部に、装着者の肌に向う立体ギャザーが形成されている。

【0030】この吸収性物品1を構成する積層体1Aは、横方向（X方向）の中心部の所定幅寸法Wの部分で、剛軟度の高い領域（i）である。また前記領域（i）の横方向の両側部で且つ吸収コア4が存在している部分が剛軟度の低い領域（ii）である。

【0031】この剛軟度の差は、積層体1Aの前記中央領域に剛軟度強化手段を設けることにより構成できる。

【0032】まず、図4（A）に示すものでは、吸収コア4の前記幅寸法Wの範囲内の中央領域4aの剛軟度が、吸収コア4の両側領域4b、4bの剛軟度よりも高くされ、剛軟度を高くした吸収コア4の中央領域4aが剛軟度強化手段11を構成している。

【0033】吸収コア4の中央領域4aの剛軟度を、吸収コア4の両側領域4b、4bの剛軟度よりも高くするには、中央領域4aの繊維密度を両側領域4b、4bの繊維密度よりも高くすることにより達成できる。例えば、吸収コア4を形成する際に、中央領域4aと両側領域4b、4bを一定の厚みの繊維層で形成し、さらに中央領域4aのみに他の繊維層を重ね、中央領域4aのみをあるいは中央領域4aと両側領域4b、4bの双方を加圧または加熱加圧して、吸収コア4全体を同じ厚さとする。または、吸収コア4を形成する過程で、中央領域4aにおいて繊維層の高が多く（目付けが多く）、両側領域4b、4bにおいて高の少ない（目付けの少ない）繊維ウェブを形成し、これを加圧または加熱加圧して、全体を同じ厚さとする。これにより中央領域4aの剛軟度を両側領域4b、4bの剛軟度よりも高くできる。

【0034】または、吸収コア4の中央領域4aに、親水処理した熱可塑性繊維を、両側領域4b、4bよりも多く含ませ、中央領域4aまたは吸収コア4全体に熱風を与え、中央領域4aにおいて比較的多くの熱可塑性繊維どうしを熱融着させ、これにより中央領域4aの剛軟度を両側領域4b、4bの剛軟度よりも高くしてもよい。これにより、吸収コア4の中央領域4aそのものを、剛軟度強化手段11にできる。

【0035】あるいは、吸収コア4が、粉碎バルブなどの吸水性繊維および／または親水性繊維（親水処理した疎水性繊維を含む）と、高吸水性ポリマーとの混合体である場合に、中央領域4aに含まれる高吸水性ポリマーの量を両側領域4b、4bでの高吸水性ポリマーの量よりも多くし、あるいは中央領域4aのみに高吸水性ポリマーを含ませる。そして、少量の水分を与えることにより高吸水性ポリマーを介して繊維どうしを密着させ、これにより中央領域4aでの剛軟度を高くしてもよい。

【0036】図4（B）では、吸収コア4の中央領域の幅寸法Wの領域内に補強部材7が埋設されており、この

補強部材 7 が剛軟度強化手段 12 となっている。

【0037】補強部材 7 が設けられていない部分の吸収コア 4 は、主に吸水性繊維、または吸水性繊維と高吸収性ポリマーとの混合体で形成されているが、前記補強部材 7 は、親水処理した熱可塑性繊維を熱融着させた剛性の高いエアースルー不織布などである。この幅寸法 W の範囲内での吸収コア 4 の吸水能力および保水能力を低下させないためには、前記幅寸法 W 内において吸収コア（吸収コアを構成する吸収性素材）と補強部材 7 とを横方向に交互に配置することが好ましい。また補強部材 7 は縦方向に連続的に延びるストライプ状に埋設する。

【0038】上記の補強部材 7 を設けると、幅寸法 W 内での積層体 1A の剛軟度をその両側領域 4b、4b の剛軟度よりも高くできる。

【0039】図 4（C）では、吸収コア 4 の中央領域の幅寸法 W の領域内に補強部材 8 が設けられ、この補強部材 8 が剛軟度強化手段 13 となっている。

【0040】前記補強部材 8 は、幅寸法が W で厚さが比較的薄く且つ縦方向に長い補強板である。この補強板は、厚紙、樹脂シート、発泡樹脂板などである。この補強板は吸収コア 4 に埋設されていてもよいし、吸収コア 4 とバックシート 3 との間に介在していてもよい。この場合、補強板は吸収コア 4 に接着され、あるいはバックシート 3 に接着されていてもよい。または補強板はバックシート 3 の外面に接着されていてもよい。さらに補強板が複数枚使用され、横方向に間隔を空けて前記幅寸法 W 内に配置されてもよい。

【0041】なお、図の実施の形態では、剛軟度の高い領域（i）が縦方向において一定の幅寸法 W の長方形であるが、剛軟度の高い領域（i）が砂時計形状であってもよい。

【0042】また、図 3 に示すように、前記剛軟度強化手段 11 または 12 または 13 が設けられている剛軟度の高い領域（i）と、その両側の剛軟度の低い領域（ii）との境界部で、吸収コア 4 に縦方向に延びる溝 4c が形成されている。この溝 4c の部分では、エンボス線を形成するように加圧することにより吸収コアが薄くなっており、あるいは吸収コア 4 を構成する繊維が除去されている。この溝 4c を設けることにより、剛軟度の低い領域（ii）にて吸収性コアが剛軟度の高い領域（i）の影響を受けることなく自由に変形できるようになる。

【0043】また、吸収性物品 1 の縦方向の中心部では、横方向に延びる折曲部（折り曲げ線）21 が形成されている。前記の剛軟度の高い領域（i）では、折曲部 21 の部分で剛性が低下している。これは図 4 に示す前記剛軟度強化手段 11 または 12 または 13 を構成する吸収コア 4 の中央領域 4a または補強部材 7 あるいは補強部材 8 に、前記折曲部 21 において折り癖をつけ、あるいは折曲部 21 において、補強部材等を部分的に除去

することにより構成される。

【0044】本発明の吸収性物品 1 は、図 1 に示すように、前記折曲部 21 の部分で折り曲げて縦方向に重なる二つ折り状態でパッケージされる。なお、折曲部 21 を縦方向に間隔を空けて 2 箇所設け、吸収性物品 1 を三つ折りにしてもよい。

【0045】この吸収性物品 1 を構成する積層体 1A は横方向の中央領域が剛軟度の高い領域（i）であり、この領域があるために偏平状態を維持しやすくなっているが、前記折曲部 21 で曲げて折り畳むことにより、コンパクトに収納できる。

【0046】図 5 は上記吸収性物品 1 の使用状態の一例を示している。符号 30 は外部装着体となるパンツ（またはパンツ型おむつ）である。

【0047】図 1 に示すように吸収性物品 1 を広げ、パンツ 30 のウエスト開口部 31 から挿入して、パンツ 30 の股領域となる下端部 32 に当てる。このとき折曲部 21 がパンツ 30 の下端部 32 の中心部に一致するように当てることにより、吸収性物品 1 をパンツ 30 の下端部の中央部に確実に位置合わせできる。

【0048】吸収性物品 1 をパンツ 30 内に当てた状態で、装着者の脚をウエスト開口部 31 から脚開口部 33 に入れて、パンツ 30 を身体に装着するが、このとき剛軟度の高い領域（i）が偏平状態を維持しようとするため、パンツ 30 内で吸収性物品 1 が縞れたりたくれることがない。また前記折曲部 21 をパンツ 30 の中心部に当てる目安としているため、装着中に吸収性物品 1 が大きくずれることがない。

【0049】また、吸収性物品 1 を装着者の股間部に装着した状態で、前記剛軟度の高い領域（i）により、吸収性物品 1 そのものの平坦度を維持でき、装着中に縞れやたくれが生じにくくなる。また両側部に剛軟度の低い領域（ii）が存在するため、この領域（ii）が自由に變形し、装着者の股間部から腿にかけて前記領域（ii）が自由に變形するため、吸収性物品 1 は股間部に確実に密着する。

【0050】また、前記領域（ii）が軟質であるため、この領域（ii）の變形により疎水性シート 15 が肌方向へ立ち上がりやすくなり、横方向両側部に立体ギャザーが形成され、この立体ギャザーにより尿の横漏れを防止できるようになる。

【0051】特に、剛軟度の高い領域（i）と剛軟度の低い領域（ii）との境界部において、吸収コア 4 に縦方向に延びる溝 4c、4c を形成しておくこと、領域（i）と領域（ii）とを分離でき、領域（i）の剛軟度の影響をあまり受けずに領域（ii）が自由に變形できる。

【0052】領域（ii）が自由に變形できるように、前記領域（ii）での吸収コア 4 を含む積層体の JIS・P8125 テーパースティフネステストで測定し

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た縦方向(Y方向)の剛軟度が、液を吸収しない未使用時において $19\text{mN}\cdot\text{cm}$ 以上で $400\text{mN}\cdot\text{cm}$ 以下であることが好ましい。さらに好ましくは $19\text{mN}\cdot\text{cm}$ 以上で $200\text{mN}\cdot\text{cm}$ 以下である。またさらに好ましくは、 $19.6133\text{mN}\cdot\text{cm}$ 以上で $196.133\text{mN}\cdot\text{cm}$ 以下である。

【0053】大人用としては、吸収コア4の横方向の幅は $100\text{mm}$ 程度であり、積層体1Aにおける剛軟度の高い領域(i)の横方向の幅寸法Wは $10\text{mm}$ 以上で $60\text{mm}$ 以下が好ましい。幅寸法Wが $60\text{mm}$ を越える  
10と、大人に装着したときに、腿近くまで前記領域(i)が延びることになって、装着状態で股間部に違和感を感じやすい。また前記 $10\text{mm}$ 未満であると、剛軟度の低い領域(ii)の面積が広がって、吸収性物品1の横方向の両側部でまくれなどが生じやすくなり、身体への装着の安定性が損なわれる。以上の点を考慮すると、更に好ましくは、剛軟度の高い領域(i)の横方向の幅寸法Wは $15\text{mm}$ 以上で $20\text{mm}$ 以下である。

【0054】さらに、幅寸法W内に配置された剛軟度強化手段11または12あるいは13を含む積層体、すなわち剛軟度が高くされた吸収コア4の中心部4aでの積層体、あるいは補強部材7(複数個の場合を含む)または補強部材8を有する部分の積層体の剛軟度について  
20は、液を吸収しない未使用時において、JIS-P8125テーバースティフネステストで測定した縦方向の剛軟度が、前記剛軟度強化手段を有していない部分の積層体の前記縦方向の剛軟度の2倍以上であり、液を吸収した状態においても、前記剛軟度強化手段11または12あるいは13を有する積層体の前記剛軟度が、剛軟度の低い領域(ii)での積層体の前記剛軟度と同じまたは  
30それよりも高いことが好ましい。

【0055】剛軟度強化手段11または12あるいは13を有する積層体の剛軟度を、他の領域での積層体(吸収コアが存在する)の剛軟度の2倍以上とすることにより、吸収性物品1を装着したときの平坦度を高くでき、  
縞れやたくれを防止できる。

【0056】さらに、前記剛軟度の高い領域(i)は少なくとも吸収性物品1の縦方向の中心部に存在していることが必要である。また前記領域(i)の縦方向の長さをL1、前記吸収コアの縦方向の長さをL0としたとき  
40に、L1がL0の $1/2$ 以上であることが好ましい。このように構成すると、吸収性物品1は少なくとも装着者の股間部に当たる部分での縞れやたくれを防止できるようになる。

【0057】なお、本発明の吸収性物品は、パンツまたはパンツ型おむつの内側に装着されるものに限られず、オープン型おむつの内側に装着して使用することができる。また生理用ナプキンとして使用することもできる。

【0058】図6は、本発明の吸収性物品の他の実施の形態を示す断面図である。図6に示す吸収性物品100  
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は、吸収コア及び剛軟度強化手段以外の点は図1および図2に示す吸収性物品1と実質上同じ構成であり、図3と共通する部材に関しては図3に示す番号と同じ符号を付与して説明を省略する。

【0059】図6に示す吸収性物品100では、吸収コアが上層40と下層41との2層構造である。上層40及び下層41は、それぞれ前記した吸収コア4と同様の部材から構成され、粉碎バルブあるいは粉碎バルブと高吸水性ポリマーなどの混合物により形成され、粉碎バルブ、あるいは粉碎バルブと高吸水性ポリマーとの混合物がティッシュなどの吸収性シートで包まれている。この場合、上層40を粉碎バルブ、下層41を粉碎バルブと高吸水性ポリマーとで構成すると、排泄液が上層40から下層41へと移行しやすくなるので好ましい。またこの場合、各層が別々に吸収性シートで包まれていてもよく、または、上層40と下層41とが一体に包まれていても良い。なお、前記上層40が親水処理された疎水性繊維のみで形成された液透過性のクッション層であり、前記上層40に与えられた体液が、上層40にあまり留まらず、下層41に浸透するような構造であってもよい。

【0060】下層41の幅寸法W1で示される中央領域(以下、中央領域W1とする)には、剛軟度強化手段が付加されている。この実施の形態の剛軟度強化手段では、前記中央領域W1において下層41の吸収コアの上下両面に、吸収性物品100の縦方向に連続して延びるエンボス線(圧縮凹線)50a、50b、50c、51a、51b、51cが形成されている。エンボス線50、51の形成によりその部分の繊維密度が高くなり、その結果、中央領域W1の剛軟度が高くなっている。エンボス処理はエンボスロールやエンボス板によって施される。なお、エンボス線を確実に形成するため、加熱下でエンボス処理、例えばヒートエンボスロールを用いて処理することが好ましい。

【0061】また、前記下層41においては、前記中央領域W1での剛軟度が、左右両側での前記下層41の剛軟度よりも高く、好ましくは剛軟度が2倍以上である。

【0062】この下層41の上側、すなわち、装着者側には上層40が重ねられている。上層40の中央領域には、下層41に設けられているようなエンボス線は設けられていない。よって上層40において前記下層41の中央領域W1と重なる部分の剛軟度は、前記下層41の中央領域W1での剛軟度よりも低くなっている。この上層40の存在によって、装着者は下層41の剛性を感じることがなく、吸収性物品100は肌触りの良いものとなる。

【0063】上層40と下層41とが積層された吸収コアでは、剛軟度の高い領域(i)と、その両側の剛軟度の低い領域(ii)との境界部で、上層40に縦方向に延びる溝40cが、下層41に同じく縦方向に延びる溝

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41cが形成されている。この溝40c、41cはエンボス線（圧縮凹線）であり、吸収コアを構成する繊維が圧縮されて形成されている。また、図6の実施の形態では、上層40の前記溝40cと下層41の前記溝41cとが、一緒に同時に加圧（または加熱加圧）され、溝40cと溝41cとが同じ場所に重なるようにして形成されている。

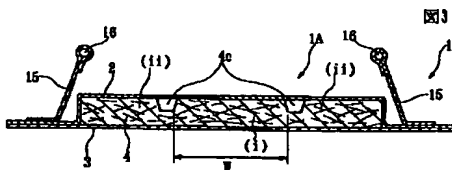
【0064】この溝40c、41cを設けることにより、下層41側では、剛軟度の低い領域（ii）にて吸収性コアが剛軟度の高い領域（i）（中央領域W1）の影響を受けることなく自由に変形できるようになる。また上層40においても、前記剛軟度の高い領域（i）と重なる部分と、前記剛軟度の低い領域（ii）と重なる部分との境界で上層40のコアが自由に曲がることのできるようになる。よって上層40では左右両側部分が、下層41の左右両側の剛軟度の低い領域（ii）と一緒に変形できるようになり、吸収性物品100は全体として体の形状や体位の変化に追従しやすいものとなる。

【0065】なお、エンボス線50、51並びに溝40c、41cでは、吸収コアが圧縮されて形成されるため、繊維の密度が高くなっている。したがって、エンボス線50、51並びに溝40c、41cの付近では毛細管現象により排泄液の吸収速度が速くなる。また、縦方向へと排泄液が拡散されやすく、吸収能を高くすることができる。

【0066】以上、剛軟度強化手段をエンボス線によって形成する例を述べたが、剛軟度を高めるエンボス処理は連続線ではなく、間欠線や波線、丸や四角や三角などの模様でも良い。または下層41の中央領域W1で吸収コア全体が加圧されて剛軟度強化手段とされていてもよい。また、吸収コアは、図6に示すように2層構造に限らず、3層以上積層させた構造であってもよい。その他、吸収コアが多層構造である場合、装着者側の層（上層）の中央領域にもエンボス処理が施されていても良い。その場合、装着感を考慮して、上層に形成されているエンボス量（面積）は下層に形成されているエンボス量（面積）より少ないことが好ましい。

【0067】さらに、図4（A）（B）（C）に示すよ\*

【図3】



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\*うにして形成された吸収コアを下層として使用し、その上に図6に示した上層40を重ねてもよい。

【0068】

【発明の効果】以上のように本発明の吸収性物品は、装着した状態でずれやたくれを防止でき、しかも股間部への密着性がよく、さらに装着感を損なうことがない。またパンツなどの外部装着体に装着しやすい。また図6に示すように2層構造にすると、中央領域で肌への接触感が良好になる。

10 【図面の簡単な説明】

【図1】本発明の吸収性物品の斜視図、

【図2】図1に示す吸収性物品の平面図、

【図3】図2のIII-III線の断面図、

【図4】（A）（B）（C）は剛軟度強化手段の構造を実施の形態別に示す断面図、

【図5】吸収性物品の装着状態の一例を示す斜視図、

【図6】本発明の吸収性物品の他の実施の形態を示す断面図、

【符号の説明】

20 1、100 吸収性物品

1A、1B 積層体

2 トップシート

3 バックシート

4 吸収コア

4a 剛軟度を高くした中央領域

4b 両側領域

4c 溝

7、8 補強部材

11、12、13 剛軟度強化手段

30 30 外部装着体（パンツ）

40 上層

40c 溝

41 下層

41c 溝

50a、50b、50c エンボス線

51a、51b、51c エンボス線

(i) 剛軟度の高い領域

(ii) 剛軟度の低い領域

【図6】

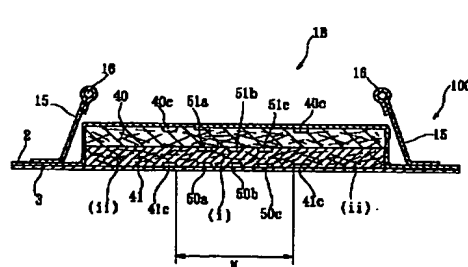


図4

【図1】

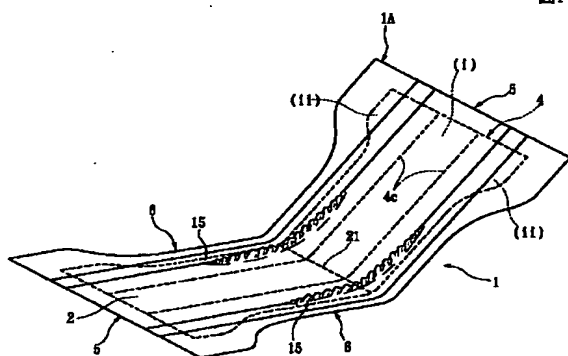


図1

【図2】

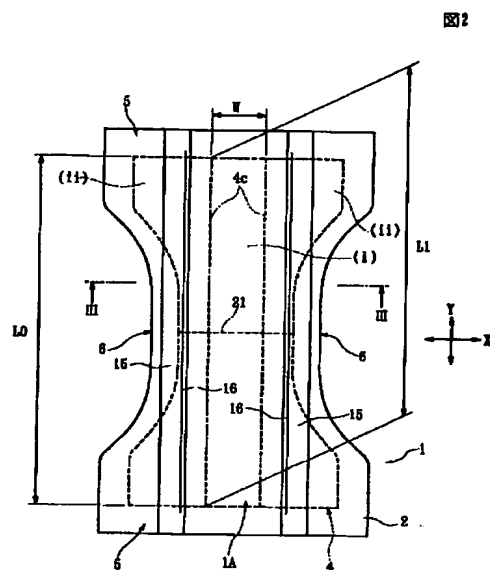


図2

【図4】

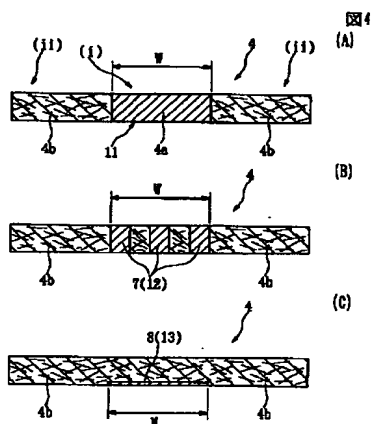


図4

【図5】

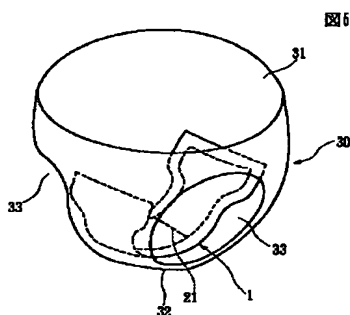


図5

フロントページの続き

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**Bibliography**

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13/472

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**Epitome**

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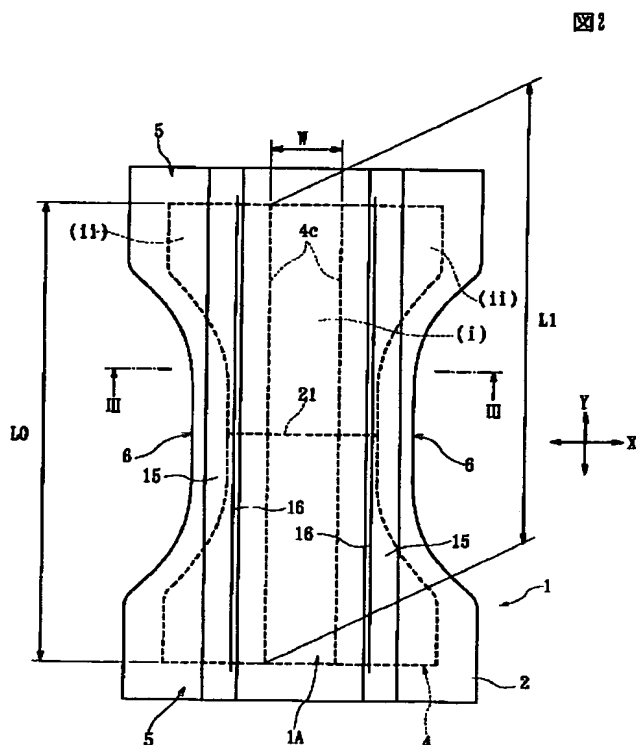
(57) [Abstract]

[Technical problem] The absorptivity goods with which the insides, such as trousers,  
are equipped should get twisted during the time of wearing, or wearing, or be easy to  
pull them in. Moreover, it is difficult at the time of wearing to carry out alignment to  
trousers etc.

[Means for Solution] The absorptivity goods 1 consist of layered product 1A with  
the top sheet 2, the absorption core 4, and a backseat 3, the high field (i) of bending  
resistance is formed in the range of width of face W in the central field of the  
longitudinal direction of this layered product 1A, and that both-sides field is a low  
field (ii) of bending resistance. Since it has the high field (i) of bending resistance,  
display flatness can be maintained during the time of wearing, or wearing, and it gets

twisted, and is hard to produce \*\*\*\*\*. Moreover, it can fold in half from the part of the bending section 21 of a central field.

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## CLAIMS

[Claim(s)]

[Claim 1] The top sheet of liquid permeability Backseat The absorption core prepared between said top sheets and backseats It is characterized by being higher than the bending resistance of the field where the bending resistance of the central field of the longitudinal direction of said layered product is a lateral both-sides field, and the absorption core exists when the direction which intersects perpendicularly with a lengthwise direction and this the direction which is absorptivity goods equipped with the above and extends toward a bottom part from a wearing person's hypogastrum is made into a longitudinal direction.

[Claim 2] Absorptivity goods according to claim 1 whose width-of-face dimension of the longitudinal direction of the high field of bending resistance is 60mm or less in 10mm or more in the central field of said lengthwise direction.

[Claim 3] Absorptivity goods according to claim 1 or 2 which are twice [ more than ] the bending resistance of said lengthwise direction of the layered product in the field to which it is the part into which it has a bending resistance strengthening means to said central field, and the bending resistance of the lengthwise direction measured by the JIS-P8125 taper stiffness test of the layered product in the field in which this bending resistance strengthening means was formed when [ intact ] not absorbing liquid does not have said bending resistance strengthening means, and the absorption core exists.

[Claim 4] Absorptivity goods [ higher than the bending resistance of said lengthwise direction of the layered product in the field to which it is the part into which it has a bending resistance strengthening means to said central field, and the bending resistance of said lengthwise direction of said layered product of the field in which said bending resistance strengthening means in the condition of having absorbed liquid is formed does not have said bending resistance strengthening means, and the absorption core exists ] according to claim 1 to 3.

[Claim 5] Absorptivity goods according to claim 1 to 4 whose bending resistance of the lengthwise direction which is the low field of said bending resistance, and was measured by the JIS-P8125 taper stiffness test of the layered product in the field to which the absorption core exists is 400 or less mN-cm in 19 or more mN-cm when [ intact ] not absorbing liquid.

[Claim 6] Absorptivity goods according to claim 3 to 5 with which the two-layer absorption core is prepared in said layered product at least, and bending resistance is strengthened for the central field of said lower layer absorption core by said bending resistance strengthening means.

[Claim 7] The upper absorption cores are absorptivity goods according to claim 6 made lower than the bending resistance of said central field where it is the part which laps with said central field of said lower layer absorption core, and bending resistance has said said lower layer bending resistance strengthening means.

[Claim 8] Absorptivity goods according to claim 6 or 7 with which the slot which extends in a lengthwise direction is formed in the absorption core of said upper layer

in the part which laps with the boundary section of said central field of said lower layer absorption core, and said both-sides field.

[Claim 9] Absorptivity goods according to claim 8 with which the slot is formed in the location same to said lower layer absorption core as the slot of the absorption core of said upper layer.

[Claim 10] Absorptivity goods according to claim 1 to 9 with which the absorption core itself which made bending resistance of the absorption core in said central field itself higher than the bending resistance of the absorption core in said both-sides field, and made the aforementioned bending resistance high is made into said bending resistance strengthening means.

[Claim 11] Absorptivity goods according to claim 10 with which bending resistance is made high by pressurizing an absorption core partially or extensively in said central field.

[Claim 12] Absorptivity goods according to claim 11 with which pressurization formation of two or more embossing lines prolonged in a lengthwise direction is carried out in said central field.

[Claim 13] Absorptivity goods according to claim 1 to 9 with which a reinforcement member is prepared in the exterior of absorption incore or an absorption core in said central field, and this reinforcement member is made into said bending resistance strengthening means.

[Claim 14] Absorptivity goods according to claim 1 to 13 whose die length of the lengthwise direction of the high field of said bending resistance is  $1/2$  or more [ of the die length of the lengthwise direction of said absorption core ].

[Claim 15] Claims 1-7 by which the slot is formed in said absorption core in the boundary section of the high field of said bending resistance, and the low field of bending resistance, absorptivity goods given in either 10-14.

[Claim 16] Absorptivity goods according to claim 1 to 15 whose bending it changes into the condition of the elasticity-ized bending section which is prolonged in a longitudinal direction being prepared in the high field of said bending resistance, and lapping with it through this bending section in a lengthwise direction at least possible.

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**DETAILED DESCRIPTION**

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**[Detailed Description of the Invention]****[0001]**

**[Field of the Invention]** In case this invention relates to absorptivity goods, such as a urine picking pad used on an incontinentia patient, for old men, etc., an incontinentia pad, or a sanitary napkin, especially is used in piles inside external wearing objects, such as trousers and a diaper, it relates to the absorptivity goods with which it can stabilize and equip, without getting twisted and \*\*\*\*\* arising.

**[0002]**

**[Description of the Prior Art]** As for absorptivity goods, such as a urine picking pad, an incontinentia pad, or a sanitary napkin, it is common to use it in piles inside external wearing objects, such as trousers and a diaper.

**[0003]** Moreover, although this kind of absorptivity goods are the structure where the absorption core is infixed between the top sheet of liquid permeability, and the backsheet of liquid impermeability, they have some in which the leg gathers which arranged elastic bodies, such as rubber, on the lateral both-sides section, and the solid gathers which start in a wearing person's direction of the skin are formed further.

**[0004]**

**[Problem(s) to be Solved by the Invention]** the conventional absorptivity goods can do the product itself in consideration of the feeling of wearing to a wearing person's skin -- it restricts -- it is made flexible. However, when using it in piles inside external wearing objects, such as trousers and a diaper, about the important ease of equipping, and getting twisted and preventing \*\*\*\*\*, it was hardly taken into consideration.

**[0005]** Especially in the thing in which said leg gathers and solid gathers were formed, since the elastic member for forming gathers is attached so that it may extend in a lengthwise direction in the lateral both-sides section, when putting on an external wearing object, it is easy to transform absorptivity goods. Consequently, it is difficult to equip with (1) absorptivity goods in the flat condition inside external wearing objects, such as trousers and a diaper.

**[0006]** (2) the time of applying absorptivity goods inside an external wearing object -- getting twisted -- \*\*\*\*\* -- being generated -- easy -- further -- a motion of the body in a wearing condition -- said -- it gets twisted, \*\*\*\*\* occurs or gets twisted, \*\*\*\*\* increases, and, as a result, it becomes easy to produce the horizontal leakage of body fluid.

**[0007]** (3) It is difficult to apply absorptivity goods to the bottom of an external wearing object correctly. When equipping especially inside trousers, absorptivity goods are inserted in the interior from waist opening of trousers, and in order to insert and equip with the leg in trousers as it is, by the time the body is completely

equipped with trousers, it will be easy to generate a location gap of the absorptivity goods within trousers, and \*\* which it gets twisted and is dusted again.

[0008] This invention solves the above-mentioned conventional technical problem, when it puts inside an external wearing object, it gets twisted, and it is hard to generate \*\*\*\*\*, and aims at offering the absorptivity goods which enabled it to certainly fit the body.

[0009] Moreover, this invention aims at offering the absorptivity goods with which position in the center section of the bottom of external wearing objects, such as trousers, certainly, and it enabled it to equip it.

[0010]

[Means for Solving the Problem] In the absorptivity goods which consisted of layered products which have the absorption core with which this invention was prepared between the top sheet of liquid permeability, the backseat, and said top sheet and backseat When the direction which intersects perpendicularly with a lengthwise direction and this the direction which extends toward a bottom part from a wearing person's hypogastrium is made into a longitudinal direction, it is characterized by the bending resistance of the central field of the longitudinal direction of said layered product being higher than the bending resistance of the field where it is a lateral both-sides field, and the absorption core exists.

[0011] These absorptivity goods are effective like a urine picking pad, an incontinencia pad, or a sanitary napkin in what is used in piles inside external wearing objects, such as trousers and a diaper. It becomes that get twisted on the absorptivity goods in the condition of having been equipped inside the external wearing object, are hard coming to generate \*\*\*\*\* on them, and they are easy to be equipped in the flat condition by establishing the high field of the bending resistance prolonged in a lengthwise direction in the layered product which constitutes absorptivity goods.

[0012] For that purpose, in the central field of said lengthwise direction, it is desirable that the width-of-face dimension of the longitudinal direction of the high field of bending resistance is 60mm or less in 10mm or more.

[0013] Moreover, when [ intact ] it has a bending resistance strengthening means to said central field and liquid is not absorbed, it is desirable that it is twice [ more than ] the bending resistance of said lengthwise direction of the layered product in the field to which it is the part into which the bending resistance of the lengthwise direction measured by the JIS-P8125 taper stiffness test of the layered product in the field in which this bending resistance strengthening means was formed does not have said bending resistance strengthening means, and the absorption core exists.

[0014] Moreover, it is desirable that it is higher than the bending resistance of said lengthwise direction of the layered product in the field to which it is the part into which it has a bending resistance strengthening means to said central field, and the bending resistance of said lengthwise direction of said layered product of the field in which said bending resistance strengthening means in the condition of having

absorbed liquid is formed does not have said bending resistance strengthening means, and the absorption core exists.

[0015] In addition, it is desirable that the bending resistance of the lengthwise direction which is the low field of said bending resistance, and was measured by the JIS-P8125 taper stiffness test of the layered product in the field to which the absorption core exists is 400 or less mN-cm in 19 or more mN-cm when [ intact ] not absorbing liquid.

[0016] By considering as this range, the contact to the skin of the absorption core of the low field of bending resistance becomes gentle.

[0017] The two-layer absorption core is prepared in said layered product at least, and it is desirable that bending resistance is strengthened for the central field of said lower layer absorption core by said bending resistance strengthening means. In this case, the upper absorption core is the part which laps with said central field of said lower layer absorption core, and it is desirable to be made lower than the bending resistance of said central field where bending resistance has said said lower layer bending resistance strengthening means.

[0018] Moreover, the slot which extends in a lengthwise direction can be formed in the absorption core of said upper layer in the part which laps with the boundary section of said central field of said lower layer absorption core, and said both-sides field. In this case, to said lower layer absorption core, it is desirable that the slot is formed in the same location as the slot of the absorption core of said upper layer.

[0019] In addition, the absorption core itself which made bending resistance of the absorption core in said central field itself higher than the bending resistance of the absorption core in said both-sides field, and made the aforementioned bending resistance high may be made into the bending resistance strengthening means. For example, in said central field, bending resistance can be made high by pressurizing an absorption core partially or extensively. Furthermore, in said central field, pressurization formation of two or more embossing lines prolonged in a lengthwise direction is carried out.

[0020] Or in said central field, a reinforcement member may be prepared in the exterior of absorption incore or an absorption core, and this reinforcement member may be made into a bending resistance strengthening means.

[0021] Furthermore, it is desirable that the die length of the lengthwise direction of the high field of said bending resistance is 1/2 or more [ of the die length of the lengthwise direction of said absorption core ].

[0022] Moreover, in the boundary section of the high field of said bending resistance, and the low field of bending resistance, it is desirable that the slot is formed in said absorption core.

[0023] Moreover, the elasticity-ized bending section which is prolonged in a longitudinal direction can be prepared in the high field of said bending resistance at least, and bending can also be changed into the condition of lapping with a lengthwise direction through this bending section possible. In addition, this bending



section may be prolonged to the low field of not only the high field of bending resistance but bending resistance, and may be crossing the absorption core in the longitudinal direction.

[0024]

[Embodiment of the Invention] The perspective view in which drawing 1 shows the urine picking pad for [ as an example of the absorptivity goods of this invention ] adults (or incontinentia pad), the top view in which drawing 2 shows the expansion condition, the sectional view where the sectional view of the III-III line of drawing 2 , drawing 4 (A), (B), and (C) show drawing 3 according to the gestalt of operation of the structure of a bending resistance strengthening means, and drawing 5 are the perspective views show the condition were equipped with the absorptivity goods of this invention inside the trousers which are external wearing objects.

[0025] These absorptivity goods 1 are constituted by layered product 1A which has the absorption core 4 prepared between the top sheet 2 of liquid permeability turned to a wearing person's skin, the backseat 3 turned to external wearing objects, such as trousers and a diaper, and the top sheet 2 and a backseat 3 as shown in the sectional view of drawing 3 . Said backseat 3 is a liquid impermeable sheet. However, the diaper of a trousers mold or an open type is used as an external wearing object, and when it is what is installed inside this diaper, some of fields or all fields of said backseat 3 are liquid permeability, and you may make it the urine which cannot be absorbed with the absorption core 4 of the absorptivity goods 1 get across to the absorber of a diaper.

[0026] The top sheet 2 is formed in hydrophobic fiber for a thing or hydrophilic fiber etc. which carried out hydrophilic processing, for example, are nonwoven fabrics, such as point bond, Ayr through, span bond, and a span ball race. Moreover, the backseat 3 is formed of what piled up the resin sheet, the nonwoven fabric, and the resin sheet and nonwoven fabric of an olefin system. The absorption core 4 is formed with mixture, such as grinding pulp or grinding pulp, and a high absorptivity polymer, and the mixture of grinding pulp or grinding pulp, and a high absorptivity polymer is wrapped in absorptivity sheets, such as tissue.

[0027] Where the absorption core 4 is pinched by the top sheet 2 and the backseat 3, as shown in drawing 1 or drawing 2 , the top sheet 2 and a backseat 3 are mutually piled up at the edges 5 and 5 of the lengthwise direction both ends of the absorptivity goods 1, and the edges 6 and 6 of longitudinal direction both sides, and both the sheets 2 and 3 are joined by hot melt adhesive etc.

[0028] When the direction turned to a bottom part from a wearing person's hypogastrium makes a longitudinal direction a lengthwise direction (the direction of Y), and the direction (the direction of X) which intersects perpendicularly with this, the whole of the absorptivity goods 1 shown in drawing 1 and drawing 2 from which a lengthwise direction turns into a longitudinal direction is the so-called sandglass configuration. That is, the top sheet 2, a backseat 3, and the absorption core 4 are sandglass configurations altogether. However, only the absorption core 4 may be a

rectangle and the absorptivity goods 1 whole may be a rectangle.

[0029] Moreover, the end face section of the hydrophobic sheets 15 and 15 prolonged in a lengthwise direction in the lateral both-sides section is joined by the inside of the absorptivity goods 1, and it is attached in the free edge in the condition that the elastic members (for example, elastic band) 16 and 16 prolonged in a lengthwise direction made it elongate. Consequently, as shown in drawing 1, the other solid gathers are formed in a wearing person's skin at the both-sides section of the absorptivity goods 1.

[0030] The part of the predetermined width-of-face dimension W of a lateral (the direction of X) core of layered product 1A which constitutes these absorptivity goods 1 is the field (i) where bending resistance is high. Moreover, the part in which it is the both-sides section of the longitudinal direction of said field (i), and the absorption core 4 exists is the low field (ii) of bending resistance.

[0031] The difference of this bending resistance can be constituted by forming a bending resistance strengthening means in said central field of layered product 1A.

[0032] First, central field 4a of the absorption core 4 to which bending resistance of central field 4a of said width-of-face dimension W of the absorption core 4 within the limits was made higher than the bending resistance of the both-sides fields 4b and 4b of the absorption core 4, and made bending resistance high constitutes the bending resistance strengthening means 11 from what is shown in drawing 4 (A).

[0033] In order to make bending resistance of central field 4a of the absorption core 4 higher than the bending resistance of the both-sides fields 4b and 4b of the absorption core 4, it can attain by making the fiber consistency of central field 4a higher than the fiber consistency of the both-sides fields 4b and 4b. for example, the time of forming the absorption core 4 — central field 4a and the both-sides fields 4b and 4b — the fiber layer of fixed thickness — forming — the fiber layer of others [ a / central field 4 ] further — piling up — central field 4a — or the both sides of central field 4a and the both-sides fields 4b and 4b are pressurized or heating pressurized, and let the absorption core 4 whole be the same thickness. or in the process which forms the absorption core 4, in central field 4a, \*\* of a fiber layer forms fiber Webb with little (a superintendent officer — few) \*\* in the both-sides fields 4b and 4b, pressurizes or pressurizes [ heating ] this, and makes the same thickness many (a superintendent officer is ) whole. Thereby, bending resistance of central field 4a can be made higher than the bending resistance of the both-sides fields 4b and 4b.

[0034] Or more thermoplastic fiber which carried out hydrophilic processing than the both-sides fields 4b and 4b may be included, hot blast may be given to central field 4a or the absorption core 4 whole, heat welding of comparatively much thermoplastic fiber may be carried out to central field 4a of the absorption core 4 in central field 4a, and, thereby, bending resistance of central field 4a may be made higher than the bending resistance of the both-sides fields 4b and 4b. Thereby, the central field 4a of the absorption core 4 itself is made to the bending resistance

strengthening means 11.

[0035] Or when the absorption core 4 is the mixture of absorptivity fiber, such as grinding pulp, and/or hydrophilic fiber (the hydrophobic fiber which carried out hydrophilic processing is included), and a superabsorbency polymer, the amount of the superabsorbency polymer contained in central field 4a is made [ more ] than the amount of the superabsorbency polymer in the both-sides fields 4b and 4b, or a superabsorbency polymer is included only in central field 4a. And by giving a small amount of moisture, fiber may be stuck through a superabsorbency polymer and, thereby, bending resistance in central field 4a may be made high.

[0036] In drawing 4 (B), the reinforcement member 7 is laid underground in the field of the width-of-face dimension W of the central field of the absorption core 4, and this reinforcement member 7 serves as the bending resistance strengthening means 12.

[0037] Although the absorption core 4 of the part in which the reinforcement member 7 is not formed is mainly formed by the mixture of absorptivity fiber or absorptivity fiber, and a superabsorbency polymer, said reinforcement member 7 is the rigid high Ayr through nonwoven fabric to which heat welding of the thermoplastic fiber which carried out hydrophilic processing was carried out. In order not to reduce the water-absorption-power force and water retention capacity of the absorption core 4 in within the limits of this width-of-face dimension W, it is desirable to arrange by turns an absorption core (absorptivity material which constitutes an absorption core), and the reinforcement member 7 in a longitudinal direction in said width-of-face dimension W. Moreover, the reinforcement member 7 is laid under the lengthwise direction in the shape of [ which is prolonged continuously ] a stripe.

[0038] If the above-mentioned reinforcement member 7 is formed, bending resistance of layered product 1A within the width-of-face dimension W can be made higher than the bending resistance of the both-sides fields 4b and 4b.

[0039] In drawing 4 (C), the reinforcement member 8 is formed in the field of the width-of-face dimension W of the central field of the absorption core 4, and this reinforcement member 8 serves as the bending resistance strengthening means 13.

[0040] The width-of-face dimension of said reinforcement member 8 is the back up plate with it in W. [ comparatively thin and thickness and ] [ long to a lengthwise direction ] This back up plate is pasteboard, a resin sheet, a foaming resin plate, etc. This back up plate may be laid under the absorption core 4, and may intervene between the absorption core 4 and a backseat 3. In this case, the absorption core 4 could be pasted or the back up plate may be pasted up on the backseat 3. Or the back up plate may be pasted up on the external surface of a backseat 3.

Furthermore, two or more back up plate is used, vacates spacing for a longitudinal direction, and may be arranged in said width-of-face dimension W.

[0041] In addition, although the high field (i) of bending resistance is the rectangle of the fixed width-of-face dimension W in a lengthwise direction with the gestalt of

operation of drawing, the high field (i) of bending resistance may be a sandglass configuration.

[0042] Moreover, as shown in drawing 3, slot 4c prolonged to the absorption core 4 in a lengthwise direction is formed in the boundary section of the high field (i) of bending resistance in which the bending resistance strengthening means 11, or said 12 or 13 is prepared, and the low field (ii) of the bending resistance of the both sides. In the part of this slot 4c, by pressurizing so that an embossing line may be formed, the absorption core is thin or the fiber which constitutes the absorption core 4 is removed. By preparing this slot 4c, it can deform freely, without influencing an absorptivity core of the high field (i) of bending resistance in the low field (ii) of bending resistance.

[0043] Moreover, in the core of the lengthwise direction of the absorptivity goods 1, the bending section (bend line) 21 prolonged in a longitudinal direction is formed. In the high field (i) of the aforementioned bending resistance, rigidity is falling in the part of the bending section 21. This is constituted by breaking into central field 4a, the reinforcement member 7, or the reinforcement member 8 of the absorption core 4 which constitutes said bending resistance strengthening means 11 shown in drawing 4, or 12 or 13 in said bending section 21, and attaching a peculiarity, or removing a reinforcement member etc. partially in the bending section 21.

[0044] The absorptivity goods 1 of this invention are packed in the state of the double fold which bends in the part of said bending section 21, and laps with a lengthwise direction, as shown in drawing 1. In addition, spacing may be vacated for a lengthwise direction, the bending section 21 may be formed in two places, and the absorptivity goods 1 may be made into three fold.

[0045] Although it is easy to maintain a flat condition since a lateral central field is a high field (i) of bending resistance and layered product 1A which constitutes these absorptivity goods 1 has this field, it can contain in a compact by bending and folding up in said bending section 21.

[0046] Drawing 5 shows an example of the busy condition of the above-mentioned absorptivity goods 1. Signs 30 are the trousers (or trousers mold diaper) used as an external wearing object.

[0047] As shown in drawing 1, the absorptivity goods 1 are opened, and it inserts from the waist opening 31 of trousers 30, and hits against the lower limit section 32 used as the crotch field of trousers 30. By guessing so that the bending section 21 may be in agreement with the core of the lower limit section 32 of trousers 30 at this time, the alignment of the absorptivity goods 1 can be certainly carried out to the center section of the lower limit section of trousers 30.

[0048] Where the absorptivity goods 1 are applied into trousers 30, a wearing person's foot is put into the foot opening 33 from the waist opening 31, the body is equipped with trousers 30, but in order that the high field (i) of bending resistance may maintain a flat condition at this time, there is nothing in which the absorptivity goods 1 had got twisted enough within trousers 30 and to give. Moreover, since it is

considering as the standard which applies said bending section 21 to the core of trousers 30, the absorptivity goods 1 do not shift greatly during wearing.

[0049] Moreover, where a wearing person's crotch section is equipped with the absorptivity goods 1, by the high field (i) of said bending resistance, the display flatness of absorptivity goods 1 itself can be maintained, and it gets twisted during wearing, and it is hard coming to generate \*\*\*\*\*. Moreover, since this field (ii) deforms freely and it applies to a thigh from a wearing person's crotch section, since the low field (ii) of bending resistance exists in the both-sides section, and said field (ii) deforms freely, the absorptivity goods 1 are certainly stuck to the crotch section.

[0050] Moreover, since said field (ii) is elasticity, the hydrophobic sheet 15 becomes easy to start according to deformation of this field (ii) in the direction of the skin, solid gathers are formed in the longitudinal direction both-sides section, and the horizontal leakage of urine can be prevented by these solid gathers.

[0051] Especially, if the slots 4c and 4c which extend to the absorption core 4 in a lengthwise direction in the boundary section of the high field (i) of bending resistance and the low field (ii) of bending resistance are formed, a field (i) and a field (ii) can be separated and a field (ii) can deform freely, without seldom being influenced of the bending resistance of a field (i).

[0052] In order for a field (ii) to be able to deform freely, it is desirable that the bending resistance of the lengthwise direction (the direction of Y) measured by the JIS-P8125 taper stiffness test of the layered product containing the absorption core 4 in said field (ii) is 400 or less mN-cm in 19 or more mN-cm when [ intact ] not absorbing liquid. They are 200 or less mN-cm in 19 or more mN-cm still more preferably. Furthermore, they are 196.133 or less mN-cm in 19.6133 or more mN-cm preferably.

[0053] As an object for adults, the width of face of the longitudinal direction of the absorption core 4 is about 100mm, and the width-of-face dimension W of the longitudinal direction of the high field (i) of the bending resistance in layered product 1A has 60 desirable mm or less at 10mm or more. When the width-of-face dimension W exceeded 60mm and an adult is equipped, said field (i) will extend to near the thigh, and it is sensitive in sense of incongruity in the crotch section in the state of wearing. Moreover, the area of the low field (ii) of bending resistance becomes it large that it is said less than 10mm, it becomes easy to produce a burr etc. in the both-sides section of the longitudinal direction of the absorptivity goods 1, and the stability of wearing in the body is spoiled. When the above point is taken into consideration, the width-of-face dimension W of the longitudinal direction of the still more desirable high field (i) of bending resistance is 20mm or less in 15mm or more.

[0054] Furthermore, the layered product containing the bending resistance strengthening means 11 or 12 arranged in the width-of-face dimension W, or 13, namely, about the bending resistance of the layered product of a part which has the layered product, the reinforcement member 7 (two or more cases are included), or the reinforcement member 8 in core 4a of the absorption core 4 by which bending

resistance was made high The bending resistance of the lengthwise direction measured by JIS and P8125 taper stiffness test when [ intact ] not absorbing liquid Also in the condition of being twice [ more than ] the bending resistance of said lengthwise direction of the layered product of a part which does not have said bending resistance strengthening means, and having absorbed liquid Said bending resistance of the layered product which has said bending resistance strengthening means 11 or 12 or 13 is the same as said bending resistance of the layered product in the low field (ii) of bending resistance, or it is desirable that it is higher than it. [0055] By making into twice [ more than ] the bending resistance of the layered product (an absorption core exists) in other fields bending resistance of the layered product which has the bending resistance strengthening means 11 or 12 or 13, display flatness when equipping with the absorptivity goods 1 can be made high, it gets twisted and \*\*\*\*\* can be prevented.

[0056] Furthermore, the high field (i) of said bending resistance needs to exist in the core of the lengthwise direction of the absorptivity goods 1 at least. Moreover, when the die length of the lengthwise direction of L1 and said absorption core is set to L0 for the die length of the lengthwise direction of said field (i), it is desirable that L1 is  $1/2$  or more [ of L0 ]. thus, the part to which the absorptivity goods 1 will hit a wearing person's crotch section at least if constituted — it gets twisted and \*\*\*\*\* can be prevented now.

[0057] In addition, the absorptivity goods of this invention are not restricted to that with which it is equipped inside trousers or a trousers mold diaper, but can be used, being able to equip inside an open-type diaper. Moreover, it can also be used as a sanitary napkin.

[0058] Drawing 6 is the sectional view showing the gestalt of other operations of the absorptivity goods of this invention. Points other than an absorption core and a bending resistance strengthening means are the same configurations on the absorptivity goods 1 shown in drawing 1 and drawing 2 , and parenchyma, and the absorptivity goods 100 shown in drawing 6 give the same sign as the number shown in drawing 3 about the member which is common in drawing 3 , and omit explanation.

[0059] In the absorptivity goods 100 shown in drawing 6 , an absorption core is the two-layer structure of the upper layer 40 and a lower layer 41. The upper layer 40 and a lower layer 41 consist of the same members as the absorption core 4 described above, respectively, it is formed with mixture, such as grinding pulp or grinding pulp, and a high absorptivity polymer, and the mixture of grinding pulp or grinding pulp, and a high absorptivity polymer is wrapped in absorptivity sheets, such as tissue. In this case, if the upper layer 40 is constituted from grinding pulp and a lower layer 41 is constituted from grinding pulp and a high absorptivity polymer, since elimination liquid will become easy to shift to a lower layer 41 from the upper layer 40, it is desirable. Moreover, each class may be separately wrapped in the absorptivity sheet in this case, or the upper layer 40 and a lower layer 41 may be wrapped in one. In addition, said upper layer 40 may be a cushion layer of liquid

permeability formed only for the hydrophobic fiber by which hydrophilic processing was carried out, and you may be the structure where the body fluid given to said upper layer 40 seldom stops at the upper layer 40, but permeates a lower layer 41. [0060] The bending resistance strengthening means is added to the central field (it considers as the central field W1 hereafter) shown with the width-of-face dimension W1 of a lower layer 41. With the bending resistance strengthening means of the gestalt of this operation, the embossing lines (compression thalweg) 50a, 50b, 50c, 51a, 51b, and 51c which follow the lengthwise direction of the absorptivity goods 100 and are prolonged are formed in vertical both sides of the absorption core of a lower layer 41 in said central field W1. The fiber consistency of the part becomes high by formation of the embossing lines 50 and 51, consequently the bending resistance of the central field W1 is high. Embossing processing is performed with an embossing roll or an embossing plate. In addition, in order to form an embossing line certainly, it is desirable to process using embossing processing, for example, a heat embossing roll, under heating.

[0061] Moreover, in said lower layer 41, the bending resistance in said central field W1 is higher than the bending resistance of said lower layer 41 in right-and-left both sides, and bending resistance is more than twice preferably.

[0062] The upper layer 40 has put on this lower layer 41 top, i.e., wearing person, side. An embossing line which is formed in the lower layer 41 is not formed in the central field of the upper layer 40. Therefore, the bending resistance of the part which laps with the central field W1 of said lower layer 41 in the upper layer 40 is lower than the bending resistance in the central field W1 of said lower layer 41. Besides, by existence of a layer 40, a wearing person does not sense the rigidity of a lower layer 41, and the absorptivity goods 100 become the good thing of the touch.

[0063] With the absorption core to which the laminating of the upper layer 40 and the lower layer 41 was carried out, slot 41c to which slot 40c prolonged in the upper layer 40 in a lengthwise direction extends in a lengthwise direction as well as a lower layer 41 in the boundary section of the high field (i) of bending resistance and the low field (ii) of the bending resistance of the both sides is formed. These slots 40c and 41c are embossing lines (compression thalweg), and the fiber which constitutes an absorption core is compressed and they are formed. Moreover, with the gestalt of operation of drawing 6, said slot 40c of the upper layer 40 and said slot 41c of a lower layer 41 are pressurized by coincidence together (or heating pressurization), and as slot 40c and slot 41c lap with the same location, they are formed in it.

[0064] By the lower layer 41 side, it can deform freely by forming these slots 40c and 41c, without influencing an absorptivity core in the low field (ii) of bending resistance of the high field (i) of bending resistance, and the (central field W1). Moreover, also in the upper layer 40, the core of the upper layer 40 can bend now freely on the boundary of the part which laps with the high field (i) of said bending resistance, and the part which laps with the low field (ii) of said bending resistance. Therefore, in the upper layer 40, a right-and-left both-sides part can deform now

together with the low field (ii) of the bending resistance of the right-and-left both sides of a lower layer 41, and it is easy to follow the absorptivity goods 100 at a bodily configuration or change of posture as a whole.

[0065] In addition, since an absorption core is compressed and formed in the embossing line 50 and 51 lists in Slots 40c and 41c, the consistency of fiber is high. Therefore, near Slots 40c and 41c, the rate of absorption of elimination liquid becomes quick by capillarity at the embossing line 50 and 51 lists. Moreover, it is easy to diffuse elimination liquid to a lengthwise direction, and absorbing power can be made high.

[0066] As mentioned above, although the example which forms a bending resistance strengthening means by the embossing line was described, patterns, such as not a successive line but an intermittent line and a wavy line, a round head, a rectangular head, and a trigonum, are sufficient as the embossing processing which raises bending resistance. Or the whole absorption core may be pressurized in the central field W1 of a lower layer 41, and you may consider as the bending resistance strengthening means. Moreover, an absorption core may be the structure which it is not restricted to two-layer structure, but carried out the three or more layer laminating as shown in drawing 6. In addition, when an absorption core is multilayer structure, embossing processing may be performed also to the central field of the layer by the side of a wearing person (upper layer). In that case, as for the amount of embossing (area) currently formed in the upper layer in consideration of a feeling of wearing, it is desirable that it is fewer than the amount of embossing (area) currently formed in the lower layer.

[0067] Furthermore, the absorption core formed in them as showed drawing 4 (A), (B), and (C) may be used as a lower layer, and the upper layer 40 shown on it at drawing 6 may be piled up.

[0068]

[Effect of the Invention] As mentioned above, the absorptivity goods of this invention get twisted in the condition of having equipped, and can prevent \*\*\*\*\*, and moreover, the adhesion to the crotch section is good and does not spoil a feeling of wearing further. Moreover, it is easy to equip external wearing objects, such as trousers. Moreover, if it is made two-layer structure as shown in drawing 6, the contact feel to the skin will become good in a central field.

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[Translation done.]

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2.\*\*\*\* shows the word which can not be translated.

3.In the drawings, any words are not translated.

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## DESCRIPTION OF DRAWINGS

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### [Brief Description of the Drawings]

[Drawing 1] The perspective view of the absorptivity goods of this invention,

[Drawing 2] The top view of the absorptivity goods shown in drawing 1 ,

[Drawing 3] The sectional view of the III-III line of drawing 2 ,

[Drawing 4] (A), (B), and (C) are the sectional view showing the structure of a bending resistance strengthening means according to the gestalt of operation,

[Drawing 5] The perspective view showing an example of the wearing condition of absorptivity goods,

[Drawing 6] The sectional view showing the gestalt of other operations of the absorptivity goods of this invention,

### [Description of Notations]

1,100 Absorptivity goods

1A, 1B Layered product

2 Top Sheet

3 Backseat

4 Absorption Core

4a The central field which made bending resistance high

4b Both-sides field

4c Slot

7 Eight Reinforcement member

11, 12, 13 Bending resistance strengthening means

30 External Wearing Object (Trousers)

40 Upper Layer

40c Slot

41 Lower Layer

41c Slot

50a, 50b, 50c Embossing line

51a, 51b, 51c Embossing line

(i) High field of bending resistance

(ii) Low field of bending resistance

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[Translation done.]

## \* NOTICES \*

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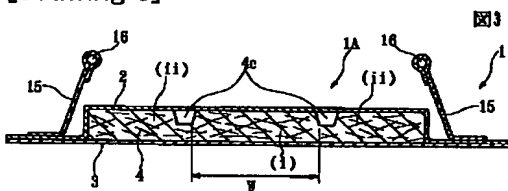
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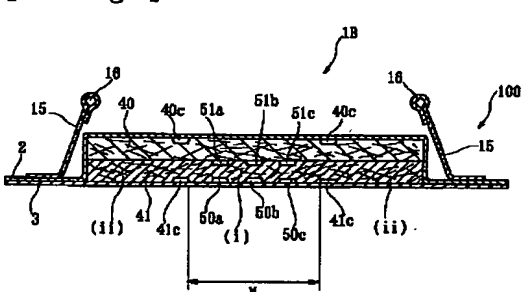
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## DRAWINGS

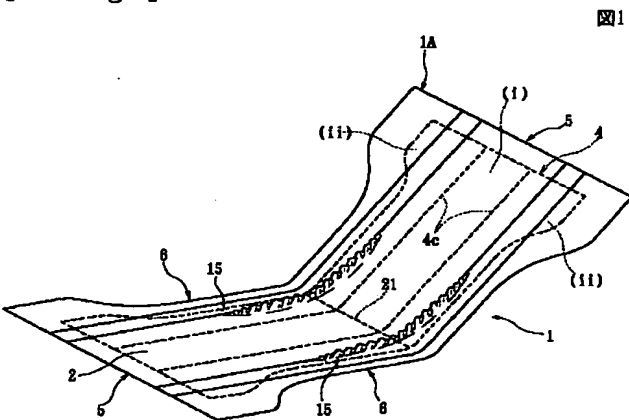
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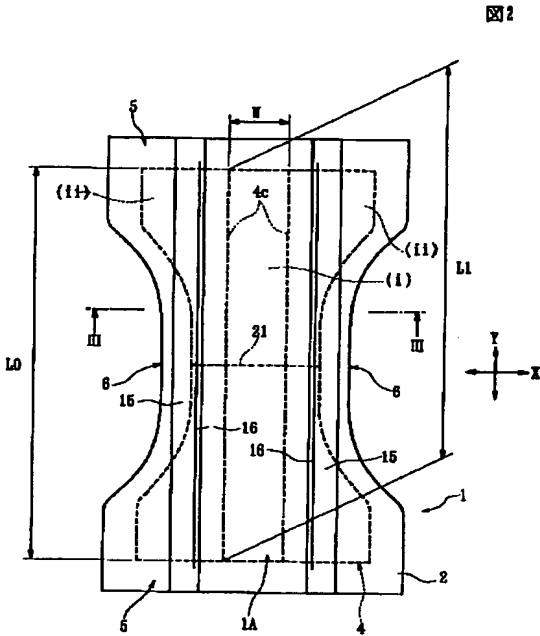
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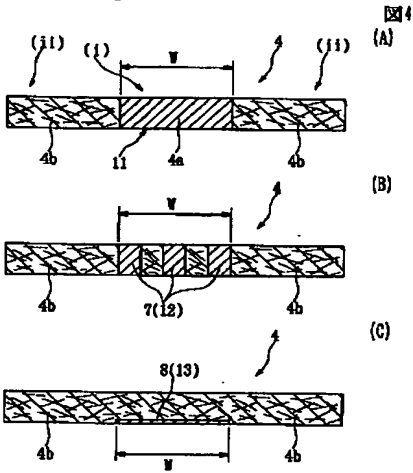
[Drawing 1]



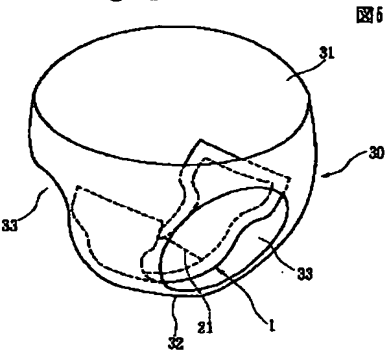
[Drawing 2]



[Drawing 4]



[Drawing 5]



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[Translation done.]